Game Changing Development

Adaptive Deployable Entry and Placement Technology (ADEPT)

Completed Technology Project (2014 - 2016)

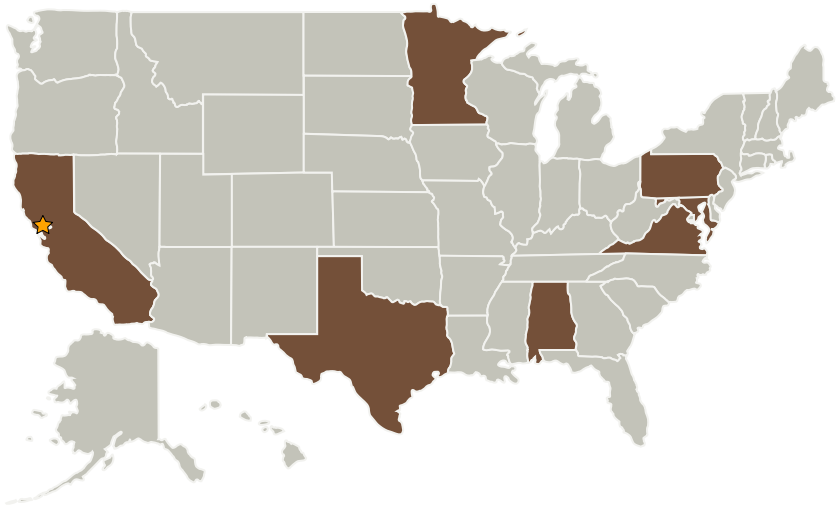
Project Introduction

The ADEPT project is a new, advanced heat shield design to protect payloads and landers delivered to planetary bodies with atmospheres. ADEPT is a mechanically deployable heatshield, like an umbrella, that can open up at planet arrival to diameters 2-5 times greater than current rigid heatshields. This large size overcomes the current limitations of NASA's heatshields to enable delivery of 10s of metric tons to Mars' surface - essential for human exploration.

Anticipated Benefits

NASA unfunded: Low ballistic mechanically deployable enables nanoSat (~5kg) SMD missions with EDL secondary payload packaging constraints. ADEPT at 2-5m scale with lifting capability can enable Titan aerocapture, Venus missions, and potential OP missions for SMD. Strong potential enabler for 20mT Mars Exploration EDL at large (>15m) scale.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California

Adaptive Deployable Entry and Placement Technology

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

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Primary U.S. Work Locations	
Alabama	California
Maryland	Minnesota
Pennsylvania	Texas
Virginia	

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Project Management

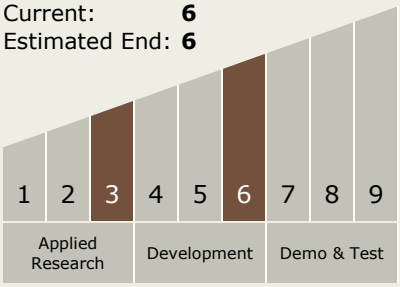
Program Director:
Mary J Werkheiser

Program Manager:
Gary F Meyering

Principal Investigator:
Paul F Wercinski

Technology Maturity (TRL)

Start: **3**
Current: **6**
Estimated End: **6**



Target Destinations

Mars, Others Inside the Solar System